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AMENDMENTS TO THE CLAIMS

1. [Original] A balloon catheter (20, 21) for positioning of a stent (9) in coronary or peripheral angioplasty, the catheter comprising a hollow conduit (22) with an open proximal end (23) and a closed distal end (25) forming exactly one expandable section (24) with an outer surface part adapted to hold a stent and having no bifurcations or side openings, one or more guidewire lumens or grooves (30,34,37) to provide passage for two or more guidewires (5,7) inside an outer perimeter of the expandable section.

2-35. [Canceled]

36. [New] A balloon catheter for positioning of a stent in coronary or peripheral angioplasty, the catheter comprising one hollow conduit with an open proximal end and a closed distal end forming exactly one expandable section with an outer surface part adapted to hold a stent and having no bifurcations or side openings, one or more guidewire lumens or grooves to provide passage for two or more guidewires inside an outer perimeter of the expandable section.

37. [New] The balloon catheter according to claim 36, wherein the one or more guidewire lumen(s) provide(s) passage for two or more guidewires inside said outer surface part of the hollow conduit from one or more open end part(s) of the one or more guidewire lumen(s) proximal to said outer surface part and through the closed end of the hollow conduit distal to said outer surface part.

38. [New] The balloon catheter according to claim 36 wherein the catheter is an over-the-wire or a rapid exchange type catheter.

39. [New] A balloon catheter for positioning of a stent in coronary or peripheral angioplasty, the catheter comprising a hollow conduit with an open proximal end and a closed distal end forming an expandable section for holding and expanding a stent, the balloon catheter being characterised in that it comprises exactly one expandable section, it further comprises one or more guidewire lumens or grooves extending along at least part of the expandable section and providing passage for at least two guidewires inside the expandable section so that, after expansion of a stent by the expandable section, the at least two guidewires run through the stent from end to end, and in that

the expandable section has an outer perimeter with no bifurcations or side openings.

40. [New] A balloon catheter for positioning of a stent in coronary or peripheral angioplasty, the catheter comprising a hollow conduit with an open proximal end and a closed distal end forming an expandable section for holding and expanding a stent, the balloon catheter being characterised in that it comprises exactly one expandable section, it further comprises one or more guidewire lumens or grooves extending along at least part of the expandable section and providing passage for at least two guidewires inside the expandable section so that, after expansion of a stent by the expandable section, the at least two guidewires pass through the stent from end to end, and in that it is adapted to position the stent in a principal vessel proximal to the bifurcation without entering either branch distal to the bifurcation with the expandable section.

41. [New] The balloon catheter according to claim 36, wherein the expandable section comprises a cylindrical central section for holding a stent, and where a distance from the distal end of the cylindrical central section to an inlet of a first guidewire lumen or groove is less than 8 mm.

42. [New] The balloon catheter according to claim 41, wherein said distance is less than 6 mm.

43. [New] The balloon catheter according to claim 41, wherein said distance is less than 2 mm.

44. [New] The balloon catheter according to claim 36, wherein said one or more guidewire lumen(s) extend(s) beyond an extreme distal end of the expandable section and is divided into two or more individual guidewire lumens at a position of exit from the extreme distal end of the expandable section.

45. [New] An assembled stent delivery system comprising a balloon catheter according to claim 36, and a stent held by the expandable section of the hollow conduit so that the one or more guidewire lumen(s) or groove(s) provide(s) inlets and outlets for two or more guidewires distally and proximally to the stent.

46. [New] An assembled stent delivery system comprising two or more balloon catheters extending in parallel to each other and a stent held by and circumventing an expandable section

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of a first balloon catheter and a non-expandable section of a second balloon catheter, the system thereby providing passage for two or more guidewires through the stent.

47. [New] The assembled stent delivery system according to claim 46, wherein the catheters are over-the-wire and/or rapid exchange type catheters.

48. [New] The assembled stent delivery system according to claim 46, wherein the stent is coated with one or more anti proliferative medical agents.

49. [New] The assembled stent delivery system according to claim 46, wherein the stent is bio degradable.

50. [New] A method for positioning a stent in a principal vessel proximally to a bifurcation, the method comprising the steps of:

inserting a distal end of a first guidewire through the principal vessel and into a first branch of the bifurcation,

inserting a distal end of a second guidewire through the principal vessel and into a second branch of the bifurcation,

providing a first catheter for positioning of a first expandable stent mounted on a distal end section of the catheter, the first catheter comprising one or more guidewire lumen(s) providing passage for two or more wires through the stent from end to end,

threading the one or more guidewire lumen(s) with proximal ends of the first and the second wire,

advancing the first catheter simultaneously over the first and the second wire until the first stent reaches the principal vessel proximal to the bifurcation, and

expanding the first stent.

51. [New] A method for positioning stents at a bifurcation of an artery and in a principal vessel proximally to the bifurcation, the method comprising positioning a stent in the principal vessel proximally to the bifurcation according to claim 50, the method further comprising the steps of:

withdrawing the first catheter simultaneously over the first and the second wire,

threading and advancing a second catheter mounted with a second expandable stent over the first guidewire and at least partially into the first branch of the bifurcation, and

expanding the second stent of the second catheter.

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52. [New] The method according to claim 51, wherein the step of advancing the second catheter comprises advancing the second catheter so that a distal end of the second stent is positioned in the first branch of the bifurcation and a proximal end is positioned inside the first stent.

53. [New] The method according to claim 51, further comprising the steps of:
threading and advancing a third catheter mounted with a third expandable stent over the second guidewire and at least partially into the second branch of the bifurcation, and
expanding the third stent of the third catheter.

54. [New] The method according to claim 53, wherein the step of advancing the third catheter comprises advancing the third catheter so that a distal end of the third stent is positioned in the second branch of the bifurcation and a proximal end is positioned inside the first stent.

55. [New] The use a catheter according to claim 36 for performing angioplasty.

56. [New] The catheter according to claim 36 for use in coronary angioplasty on humans.

57. [New] The balloon catheter according to claim 39, wherein the expandable section comprises a cylindrical central section for holding a stent, and where a distance from the distal end of the cylindrical central section to an inlet of a first guidewire lumen or groove is less than 8 mm.

58. [New] The balloon catheter according to claim 57, wherein said distance is less than 6 mm.

59. [New] The balloon catheter according to claim 57, wherein said distance is less than 2 mm.

60. [New] The balloon catheter according to claim 39, wherein said one or more guidewire lumen(s) extend(s) beyond an extreme distal end of the expandable section and is divided into two or more individual guidewire lumens at a position of exit from the extreme distal end of the expandable section.

61. [New] An assembled stent delivery system comprising a balloon catheter according to claim 39 and a stent held by the expandable section of the hollow conduit so that the one or more guidewire lumen(s) or groove(s) provide(s) inlets and outlets for two or more guidewires distally and proximally to the stent.

62. [New] The use a catheter according to claim 26 for performing angioplasty.

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63. [New] The catheter according to claim 39 for use in coronary angioplasty on humans.

64. [New] The balloon catheter according to claim 40, wherein the expandable section comprises a cylindrical central section for holding a stent, and where a distance from the distal end of the cylindrical central section to an inlet of a first guidewire lumen or groove is less than 8 mm.

65. [New] The balloon catheter according to claim 64, wherein said distance is less than 6 mm.

66. [New] The balloon catheter according to claim 64, wherein said distance is less than 2 mm.

67. [New] The balloon catheter according to claim 40, wherein said one or more guidewire lumen(s) extend(s) beyond an extreme distal end of the expandable section and is divided into two or more individual guidewire lumens at a position of exit from the extreme distal end of the expandable section.

68. [New] An assembled stent delivery system comprising a balloon catheter according to claim 40 and a stent held by the expandable section of the hollow conduit so that the one or more guidewire lumen(s) or groove(s) provide(s) inlets and outlets for two or more guidewires distally and proximally to the stent.

69. [New] The use a catheter according to claim 40 for performing angioplasty.

70. [New] The catheter according to claim 40 for use in coronary angioplasty on humans.